



North Carolina Department of Environment and Natural Resources

Dexter R. Matthews, Director

Division of Waste Management

Michael F. Easley, Governor
William G. Ross Jr., Secretary

May 7, 2008

Mr. Al Lacsamana
Waste Management
2859 Paces Ferry Road
Suite 1600
Atlanta, GA 30339

Re: *Alternate Source Demonstration*
Piedmont Landfill and Recycling Center, Permit #34-06

Dear Mr. Lacsamana:

The Solid Waste Section has reviewed the *March 14, 2008 Alternate Source Demonstration* submitted on behalf of Waste Management by Joyce Engineering, Inc. for the lined Piedmont Landfill and Recycling Center. The volatile organic compound, vinyl chloride, is being detected above the reporting limit and the North Carolina 2L Standard in the downgradient compliance groundwater monitoring well MW-02, and as a result, an Alternate Source Demonstration (ASD) was submitted to the Solid Waste Section in accordance with 15A NCAC 13B .1633(c)(3). The Piedmont Landfill and Recycling Center opened in 1990 and closed in 2004. An active landfill gas collection and control system has been in operation at the landfill since 1996. The active landfill gas system includes 55 gas extraction wells, extraction blower system, and flares.

During the September 2007 semiannual groundwater sampling event, vinyl chloride and benzene were detected above their North Carolina 2L Standards in groundwater monitoring well MW-02. A confirmation sampling event was conducted in November 2007. These results confirmed that vinyl chloride is being detected above the North Carolina 2L Standards (1.3 ug/L with a 2L Standard of 0.015 ug/L), and this exceedance is also statistically significant over background. Benzene was detected at 0.98 ug/L, just slightly below its North Carolina 2L Standard of 1.0 ug/L.

As a result, an initial evaluation of the data was performed. Pursuant to the March 2008 ASD, preliminary analysis suggested landfill gas was the source of the impacts at MW-02. This was based on the relatively low field conductivity and chloride levels in MW-02 and the fact that the landfill gas vacuum (static pressure) was recently reduced in the vicinity of the well, due to modifications to the landfill gas collection system. The Piedmont Landfill and Recycling Center initiated more vacuum in the area of concern and permanent modifications were conducted on the landfill gas header system. On February 5, 2007, MW-01, MW-02, and the leachate sample were analyzed for indicator parameters. Vinyl chloride was also analyzed in MW-02 and the leachate sample was analyzed for volatile organic compounds. During this sampling event, vinyl chloride was detected above the North Carolina 2L Standard, but not above the reporting limit of 1.0 ug/L. The indicator parameters for MW-01 and MW-02 appeared to indicate that the groundwater has not been impacted by leachate.

A letter dated April 22, 2008 from Joyce Engineering, Inc. was submitted to the Solid Waste Section regarding the results from the March 2008 semiannual groundwater sampling event. Vinyl chloride and benzene were detected in groundwater monitoring well MW-02 above their North Carolina 2L Standards at 1.4 ug/L for both constituents. The letter stated, "Improvements to the landfill gas remediation system were instigated in January 2008 to address this issue; however, there may not yet have been sufficient time for those improvements to fully mitigate the gas impacts to the groundwater

near MW-02.” The concentration of vinyl chloride was very similar to the September 2007 sampling event, and the concentration of benzene increased slightly compared to the September 2007 sampling event.

As a result, the *Alternate Source Demonstration* (for vinyl chloride) is approved as described. However, if the Spring 2009 semiannual groundwater sampling event for MW-02 does not show a significant decrease in both vinyl chloride and benzene *and* if vinyl chloride is still statistically significant relative to the background concentration, then assessment monitoring for MW-02 shall be initiated pursuant to 15A NCAC 13B .1634. Please call me at (919) 508-8500 if you have any questions or concerns regarding this letter.

Sincerely,



Jaclynne Drummond
Hydrogeologist
Environmental Compliance
Solid Waste Section

cc: Van Burbach, Joyce Engineering
Mark Poindexter, Field Operations Supervisor
Jason Watkins, Central District Supervisor
John Patrone, Waste Management Specialist
Solid Waste Central Files